

WHAT IS CLAIMED IS:

1. An image processing apparatus comprising:

an image attribute determining unit to determine an image attribute of an image data;

an object dividing unit to divide the image data into a plurality of objects based on the image attribute; and

an object describing unit to describe the objects in predetermined formats and convert the objects into a file of a predetermined file format, wherein

the object describing unit describes an object having a predetermined image attribute among the objects by associating an additional object representing information on the predetermined image attribute with the object.

2. The image processing apparatus according to claim 1, further comprising a data converting unit to convert the file of the predetermined file format into a print instruction for a printer and output the print instruction to the printer, wherein

the data converting unit identifies the object having the predetermined image attribute based on the additional object, and performs an image processing to the object based on the predetermined image attribute.

3. The image processing apparatus according to claim 2, wherein when the object is identified as an object having a text attribute, the data converting unit performs a halftone processing with a higher sharpness to the object, compared with an object having another attribute than the text attribute.

4. The image processing apparatus according to claim 2, wherein when the object is identified as an object having a text attribute with an achromatic color, the data converting unit performs an image processing to enhance a black color in color correction and black color generation or an image processing to eliminate any remaining color of the object.

5. The image processing apparatus according to claim 2, wherein when the object is identified as an object having a text attribute with a white background, the data converting unit performs a halftone processing with a higher sharpness to the object, compared with an object having other attribute than the text attribute with the white background.


6. The image processing apparatus according to claim 2, wherein when the object is identified as an object having a text attribute with a color

background, the data converting unit performs an identical halftone processing as that for the color background to the object.

7. The image processing apparatus according to claim 1, wherein the additional object is an invisible object.

8. The image processing apparatus according to claim 1, wherein a size of the additional object equals that of the object having the predetermined image attribute.

9. The image processing apparatus according to claim 1, wherein the predetermined file format is a portable document format.

10. An image processing system comprising: 
an image processing apparatus including
an image attribute determining unit to determine an image attribute of an image data;
an object dividing unit to divide the image data into a plurality of objects based on the image attribute; and

an object describing unit to describe the objects in predetermined formats and convert the objects into a file of a predetermined file format, wherein the object describing unit describes an object having a predetermined image attribute among the objects by associating an additional object representing information on the predetermined image attribute with the object; and

a printer to receive the print instruction and print the document.

11. An article of manufacture having one or more recordable medium storing instructions which, when executed by a computer, cause the computer to perform a method comprising:

determining an image attribute of an image data;

dividing the image data into a plurality of objects based on the image attribute;

describing the objects in predetermined formats; and

converting the objects into a file of a predetermined file format, wherein describing the objects includes describing an object having a predetermined image attribute among the objects by associating an additional object representing information on the predetermined image attribute with the object.

12. The article of manufacture according to claim 11, wherein the method further comprises:

converting the file of the predetermined file format into a print instruction for a printer;

identifying the object having the predetermined image attribute based on the additional object;

performing an image processing to the object based on the predetermined image attribute; and

outputting the print instruction to the printer.